REMARKS

Claim Rejections – 35 USC § 103

Claims 1-5 and 20-22 were rejected under 35 USC §103(a) as being unpatentable over Brake (US 6,432,466) in view of Jonas (US 4,971,824). Applicants' respectfully request the Examiner to reconsider and withdraw the rejection in light of the following remarks.

Brake was cited for its disclosure of a frozen product comprising about 3-32% sweetener, about 0.2-1.5% stabilizer, about 0 – 0.12% emulsifier, 0-10% non-fat milk solids, 0-5% milk fat, water and 20-90% fruit puree which the Examiner asserted inherently contain soluble and insoluble fiber. Since emulsifier is an optional ingredient, some embodiments disclosed by Brake are emulsifier free (page 2 of Office Action).

Brake is silent with respect to compositions that contain no additional stabilizer, aerated products that have any specific overrun, pH, melt down resistance, meltdown initiation time and any specific amounts of fiber.

Brake is also silent regarding the isoelectric point of proteins in general and in particular any processing steps which must be used to ensure that products incorporating proteins are stable or have optimal properties.

Unlike emulsifiers which are optional, Brake specifically teaches a lower limit for the stabilizer and states that "the stabilizer ingredient is used to improve the ability of the products to withstand commercial shelf life and substantial heat shock without undue deterioration". A lower limit on stabilizer is consistently taught in the

specification, exemplary embodiment (table 1) and the claims and is thus an essential element of the invention.

Jonas teaches a frozen dessert comprising fruit puree. The frozen dessert has an overrun between about 18 and 100, a pH of less that 4.5. The frozen products contain fruit purees and no non-natural additives. The sugars are derived from fruit juices and have no added vegetable proteins and stabilizer.

Jonas does not disclose compositions containing milk solids or added sugars in combination with fruit purees or other sources of dietary fiber. Jonas in fact dissuades the use of milk solids, and added sugars stating on column 3, lines 33-41. "The fruit products described herein provide a creamy type frozen dessert without the disadvantageous ingredients of a milk product based food. For example, the dessert of the instant invention has no milk, milk solids, lactose, cholesterol, added sugars or artificial flavors".

Jonas is silent regarding any processing steps which must be used to ensure that acidic products that incorporate proteins are stable or have optimal properties such as high melt-down resistance.

In contrast, applicants invention is directed to highly stable, acid, frozen aerated products that contain milk proteins and sweeteners in combination with specific dietary fibers (e.g., from fruit purees), and do not contain any added emulsifiers or stabilizers.

Applicants have discovered that when milk proteins are incorporated with acid fruit purees, the properties of the resulting product strongly depends on how the product is assembled, i.e., the manufacturing process, in addition to the composition of the

puree in terms of its soluble and insoluble fiber content. The particular measurement applicants have used to characterize the composition and provide overall criteria for acceptability within the overall composition/process space is a "melt-down resistance time of 120 minutes when measured at 20°C". From the consumers point of view this criteria provides a product that does not become runny as it melts.

The Examiner has argued that applicants' invention could have been derived by a person of ordinary skill in the art by picking and choosing from the optional and alternative ingredients and properties disclosed by Brake and Jonas. However, the selection would have required the artisan to have ignored the total teachings found in the references. For example, the artisan would have selected the optional milk solids and the processed sugars of Brake while leaving out stabilizers which Brake regards as essential and combining these elements with fruit purees and then processing to the standards of Jonas while ignoring the teaching of Jonas that the dessert "has no milk, milk solids, lactose, cholesterol, added sugars or artificial flavors".

Applicants submit that even in the unlikely event that the Artisan had made such a selection, the references would still not have taught the artisan with any specificity how to obtain a frozen aerated product that had all the ingredients recited in applicants' claim and which also would have exhibited a resistance to meltdown and to serum leakage for extended periods of time as determined by having a meltdown initiation time greater than about 120 minutes when measured at 20°C.

The Examiner has consistently marginalized applicants' discovery of routes to achieve acceptable emulsifier/stabilizer free, frozen aerated products with compositions that contain fruit puree and milk proteins, asserting:

"*Regarding the meltdown initiation time of the product, Brake discloses a frozen composition with substantially the same composition as that as instantly claimed, thus one of ordinary skill in the art at the time the invention was made would expect the frozen composition as taught by Brake to possess substantially the same properties as the instantly claimed invention, including meltdown initiation time properties*" Page 4 of Office Action mailed January 9, 2008.

Applicants respectfully submit that the above assertion is both inaccurate and incorrect.

Firstly, the products disclosed by Brake contains a stabilizer as an essential ingredient and milk proteins as an optional ingredient while applicants' composition must contain milk proteins and must not contain stabilizer. Brake specifically teaches that "the stabilizer ingredient is used to improve the ability of the products to withstand commercial shelf life and substantial heat shock without undue deterioration". Consequently, based on the teachings of Brake, there is absolutely no reason for the artisan to have assumed that any product falling within the scope of Brake would have the same meltdown initiation time as a product such as disclosed by applicant in which the stabilizer had been removed. In fact, based on the teachings of Brake, there is every reason for the artisan to have reached just the opposite conclusion.

Secondly, the proposition that two materials with the same composition have the same properties is only generally valid for systems at true thermodynamic equilibrium, e.g., a solution. The products to which the instant invention pertains are multi-component, multi-phase dispersions. A person of ordinary skill in the art to which the invention pertains (e.g., a bachelors degree in food science with 3-5 years of food product experience) would have recognized that such complex products like ice creams

which are metastable multiphase dispersions, depend very much on the way they are assembled, i.e., processed. Otherwise, one could simply sequentially pour milk, sugar, and flavoring into a partially filled container, freeze it and get ice cream – a transformation which is thermodynamically impossible.

Applicants' found that the ability of a frozen aerated product to exhibit desirable meltdown resistance depends not only on composition, e.g. level of dietary fiber, but also on the process used to prepare the composition particularly when fruit purees and milk proteins are present in the same composition. Thus, meltdown resistance as measured by a threshold meltdown resistance time is not an inherent property of the composition. For example, applicants have found that the milk protein should be pasteurized in a premix which has a pH adjusted to be above its isoelectric point so as to avoid extensive denaturation of the protein which results in precipitation and instability.

Since Brick is silent with regard to any method of preventing "undue deterioration" accompanying "heat shock" apart from adding stabilizer and Jonas is completely silent regarding melt-down resistance in general, let alone melt down resistance in compositions to which Jonas does not pertain (those containing milk proteins), the references would not have provided the artisan with any direction about stabilizing applicants' type of composition.

In fact, the methods of preparing the frozen desserts expressly taught by both Brick (column 4, line 59 to column 5, line 12) and by Jonas (column 3, example 1, lines 62-67) involves mixing all the ingredients together to form a base and then pasteurizing this base. The pasteurization method used by Jonas involves boiling for 3 minutes while Brick teaches 30 minutes at 165 F or 30-180 seconds at a 180-200 F. The Jonas base

has a pH of 3.4. Although Brick does not disclose the pH of the mix, it is likely to also be around 3.4. Thus, the pH disclosed by the references is far below the isolectric pH of typical milk proteins (e.g., casein has an isoelectric point around 4.6). Both of the disclosed processes would be expected to induce denaturation of milk proteins had such proteins been present. Applicants have informed their agent that subjecting a typical milk protein to such pasteurization conditions as taught by Brake and Jonas would denature and precipitate the protein and lead to an unstable frozen aerated product.

Absent a disclosure of the meltdown initiation time, an objective criteria for its attainment, and the process routes to achieve it in milk protein containing frozen aerated products that also contain fruit puree, the combination of Brake and Jonas does not present a *prima facie* case of obviousness.

Claims 21 and 22 are even more removed from the combination of Brake and Jonas.

Regarding claim 21, neither reference teaches meltdown resistance or meltdown initiation time, let alone a composition having a meltdown initiation time of at least 180 minutes.

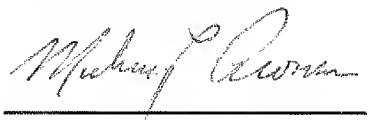
Regarding claim 22 which is a product by process claim, nether reference discloses a composition having the components recited in claim 1 that is made by a process in which the milk solid proteins is pasteurized in a premix comprising a fruit and/or vegetable puree in which the pH of said puree is first adjusted to a value above the isoelectric point of the milk protein.

As already discussed, the pH at which both the Brick and Jonas base mixture are pasteurized is approximately 3.4, while the isolectric point of a typical milk proteins is 4.2 - 5. Applicants have informed their agent that subjecting a typical milk protein to such pasteurization conditions would denature and precipitate the protein and lead to an unstable frozen aerated product. Thus, the process step recited in claim 22 leads to a structural change in that a composition processed by the recited method exhibits a greater resistance to deterioration on melting.

In light of the above amendment and remarks, applicants respectfully request that the 103(a) rejection over Brake (US 6,432,466) in view of Jonas (US 4,971,824) be reconsidered and withdrawn and that the application be allowed to issue.

If a telephone conversation would be of assistance, Applicant's undersigned agent invites the Examiner to telephone at the number provided.

Respectfully submitted,



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